

2. (Amended) A recombination system according to Claim 1,
~~wherein said first DNA comprises at least a first segment of a~~
~~first gene of interest, said recombination system further~~
comprising:

(iii) a second DNA[, ~~wherein said second DNA is~~
~~selected from~~] comprising:

(a) at least a second [portion] segment of said
first gene of interest, or
(b) at least a [portion] segment of a second gene
of interest;

wherein said second DNA contains at least one FLP recombination
target site; and wherein said second DNA, when combined in
reading frame with said first DNA, provides a functional gene.

3. (Amended) A recombination system according to Claim 2
wherein said second DNA comprises ~~[an additional portion]~~ said
second segment of said first gene of interest.

4. (Amended) A recombination system according to Claim 2
wherein said second DNA comprises ~~[at least a portion]~~ said
segment of ~~[a]~~ said second gene of interest.

5. (Amended) A recombination system according to Claim 4
wherein said [portion] segment of said second gene of interest,
when combined in reading frame with said first DNA, provides a
hybrid, functional gene.

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6. (Amended) A recombination system according to Claim 4
wherein said [portion] segment of said second gene of interest,
when combined with said first DNA, disrupts the function of said
first gene of interest.

8. (Amended) A recombination system according to Claim 1
wherein the FLP recombinase is [derived] from a species of the
genus *Saccharomyces*.

9. (Amended) A recombination system according to Claim 1
wherein the FLP recombinase is [derived] from a strain of
Saccharomyces cerevisiae.

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10. (Amended) A recombination system according to Claim 9
wherein said FLP recombinase is encoded by the [approximately
~~1450 base pair]~~ sequence set forth as [Sequence ID No. 1] SEQ ID
NO:1.

11. (Amended) A recombination system according to Claim 1
wherein said first DNA provides a readily analyzable marker
feature to [the] a host into which said system is introduced.

12. (Amended) A recombination system according to Claim 2
wherein said second DNA provides a readily analyzable marker
feature to [the] a host into which said system is introduced.

14. (Amended) A DNA construct comprising, as an autonomous fragment, in the following order, reading from 5' to 3' along said fragment:

- (a) a first FLP recombination target site,
- (b) an insert ~~portion~~ segment comprising ~~[, in any suitable sequence]~~:

 - (1) at least one restriction endonuclease recognition site,
 - (2) at least one marker gene,
 - (3) a bacterial origin of replication, and optionally
 - (4) a mammalian cellular or viral origin of DNA replication, and

- (c) a second FLP recombination target site in tandem with said first FLP recombination target site.

15. (Amended) A method for the assembly of functional gene(s), which ~~is (are)~~ then suitable for activation of expression in mammalian cells, by recombination of individually inactive gene segments ~~[derived]~~ from one or more gene(s) of interest, wherein each of said segments contains at least one recombination target site, said method comprising:

contacting said individually inactive gene segments with a FLP recombinase, under conditions suitable for recombination to occur, thereby providing a DNA sequence which encodes a functional gene of interest.

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16. (Amended) A method according to Claim 15 wherein the FLP recombinase is [derived] from a species of the genus *Saccharomyces*.

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C4
17. (Amended) A method according to Claim 15 wherein the FLP recombinase is [derived] from a strain of *Saccharomyces cerevisiae*.

18. (Amended) A method according to Claim 17 wherein said FLP recombinase is encoded by the [approximately 1450 base pair] sequence set forth as [Sequence ID No. 1] SEQ ID NO:1.

29. (Amended) A mammalian cell, wherein the genomic DNA of said cell contains a first DNA comprising at least one FLP recombination target site therein, wherein said cell is a nonhuman cell or an isolated human cell.

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30. (Amended) A mammalian cell according to Claim 29 wherein said [FLP recombination target site in the genomic DNA of said cell is positioned within] first DNA comprises at least a [portion] first segment of one or more first gene(s) of interest.

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32. (Amended) A mammalian cell according to Claim 30 wherein said first gene(s) of interest provide a readily analyzable marker feature to [the] a host [system] into which said cell is introduced.

33. (Amended) A mammalian cell according to Claim 29 wherein said FLP recombination target site has the sequence:

5'-GAAGTTCCATTCTCTAGAAAGTATAGGAACCTTC-3' [~~or functional equivalents thereof~~].

34. (Amended) A mammalian cell according to Claim 30 further comprising ~~[an additional]~~ a second DNA [fragment], wherein said ~~[additional]~~ second DNA [fragment is selected from] comprises:

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- (a) at least a second [portion] segment of said first gene of interest, or
- (b) at least a [portion] segment of a second gene of interest;

wherein said second DNA contains at least one FLP recombination target site; and wherein said second DNA, when combined in reading frame with said first DNA, provides a functional gene.

35. (Amended) A transgenic, non-human mammal, wherein the genomic DNA of said mammal contains a first DNA comprising at least one FLP recombination target site ~~[in the genomic DNA thereof]~~.

36. (Amended) A transgenic, non-human mammal according to Claim 35 wherein said ~~[FLP recombination target site is positioned within]~~ first DNA comprises at least a [portion] first segment of one or more first gene(s) of interest.

39. (Amended) A transgenic, non-human mammal according to Claim 36 wherein said gene(s) of interest provides a readily analyzable marker feature to ~~the host system~~ said mammal.

40. (Amended) A transgenic, non-human mammal according to Claim 35 wherein said FLP recombination target site has the sequence:

5'-GAAGTTCCTATTCTCTAGAAAGTATAGGAACCTTC-3' [~~or functional equivalents thereof~~].

41. (Amended) A transgenic, non-human mammal according to Claim 36 further comprising ~~an additional~~ a second DNA ~~fragment~~, wherein said ~~additional~~ second DNA ~~fragment is selected from~~ comprises:

- (a) at least a second ~~portion~~ segment of said first gene of interest, or
- (b) at least a ~~portion~~ segment of a second gene of interest;

wherein said second DNA contains at least one FLP recombination target site; and wherein said second DNA, when combined in reading frame with said first DNA, provides a functional gene.